

Listing of the Claims

This listing of the claims will replace all prior versions, and listings, of claims in the Application:

1-90 (Cancelled)

91. (New) A lead-acid cell for an SLI battery configured for use in vehicle applications comprising:

a container;

a positive plate and a negative plate disposed within the container;

a separator disposed within the container and separating the positive plate and the negative plate;

wherein the positive plate comprises a thin grid supporting structure formed by book mold gravity casting and having a layer of active material; and

wherein the grid supporting structure comprises

a lead-based alloy consisting essentially of lead;

tin in the range of greater than 0.5 percent to about 1.2 percent;

tin in a ratio to calcium of greater than 12:1; and

silver in the range of greater than 0 to less than 0.015 percent;

wherein the percentages are based upon the total weight of the alloy.

92. (New) The cell of Claim 91 wherein the tin content of the alloy is in the range of about 0.8 percent to about 1.2 percent and the ratio of tin to calcium is greater than 15:1.

93. (New) The cell of Claim 91 wherein the tin content of the alloy is in the range of about 0.6 percent to about 1.2 percent.

94. (New) The cell of Claim 91 wherein the tin content of the alloy is in the range of about 0.8 percent to less than 1.2 percent.

95. (New) The cell of Claim 91 wherein the silver content of the alloy is in the range of about 0.003 percent to less than 0.015 percent.

96. (New) The cell of Claim 91 wherein the silver content of the alloy is in the range of about 0.008 percent to less than 0.015 percent.

97. (New) The cell of Claim 91 wherein the silver content of the alloy is in the range of about 0.005 percent to less than 0.015 percent.

98. (New) The cell of Claim 91 wherein the silver content of the alloy is in the range of greater than 0 to about 0.0124 percent.

99. (New) The cell of Claim 91 wherein the silver content of the alloy is in the range of about 0.003 percent to about 0.0124 percent.

100. (New) The cell of Claim 91 wherein the silver content of the alloy is in the range of about 0.008 percent to about 0.0124 percent.

101. (New) The cell of Claim 91 wherein the silver content of the alloy is in the range of about 0.005 percent to about 0.0124 percent.

102. (New) The cell of Claim 91 wherein the silver content of the alloy is in the range of greater than 0 to less than 0.01 percent.

103. (New) The cell of Claim 91 wherein the silver content of the alloy is in the range of greater than 0 to about 0.008 percent.

104. (New) The cell of Claim 91 wherein the amount of calcium in the alloy is such that the ratio of tin to calcium is not less than 15:1.

105. (New) The cell of Claim 91 wherein the amount of calcium in the alloy is such that the ratio of tin to calcium is not less than 20:1.

106. (New) The cell of Claim 91 wherein the calcium is present in the alloy in the range of about 0.03 percent to about 0.055 percent and the ratio of tin to calcium is not less than 15:1.

107. (New) The cell of Claim 91 wherein the calcium is present in the alloy in the range of about 0.03 percent to about 0.055 percent and the ratio of tin to calcium is not less than 20:1.

108. (New) The cell of Claim 91 wherein the alloy further includes aluminum in the range of greater than 0 to about 0.03 percent.

109. (New) The cell of Claim 91 wherein the alloy further includes aluminum in the range of greater than 0 to about 0.02 percent.

110. (New) The cell of Claim 91 wherein the SLI battery comprises a starting, lighting and ignition battery.

111. (New) A lead-acid cell for an SLI battery configured for use in vehicle applications comprising:
- a container;
 - a positive plate and a negative plate disposed within the container;
 - a separator disposed within the container and separating the positive plate and the negative plate;
 - wherein the positive plate comprises a thin grid supporting structure formed by a book mold gravity casting and having a layer of active material; and
 - wherein the grid supporting structure comprises
 - a lead-based alloy consisting essentially of lead;
 - tin in the range of about 0.5 percent to about 1.2 percent;
 - tin in a ratio to calcium of greater than 12:1; and
 - silver in the range of greater than 0 to about 0.0124 percent;
 - wherein the percentages are based upon the total weight of the alloy.
112. (New) The cell of Claim 111 wherein the tin content of the alloy is in the range of about 0.8 percent to about 1.1 percent and the ratio of tin to calcium is greater than 15:1.
113. (New) The cell of Claim 111 wherein the tin content of the alloy is in the range of about 0.6 percent to about 1.2 percent.
114. (New) The cell of Claim 111 wherein the tin content of the alloy is in the range of about 0.8 percent to about 1.1 percent.
115. (New) The cell of Claim 111 wherein the silver content of the alloy is in the range of about 0.003 percent to about 0.0124 percent.
116. (New) The cell of Claim 111 wherein the silver content of the alloy is in the range of about 0.008 percent to about 0.0124 percent.

117. (New) The cell of Claim 111 wherein the silver content of the alloy is in the range of about 0.005 percent to about 0.0124 percent.

118. (New) The cell of Claim 111 wherein the silver content of the alloy is in the range of greater than 0 to less than 0.01 percent.

119. (New) The cell of Claim 111 wherein the silver content of the alloy is in the range of greater than 0 to about 0.008 percent.

120. (New) The cell of Claim 111 wherein the silver content of the alloy is in the range of about 0.003 percent to about 0.008 percent.

121. (New) The cell of Claim 111 wherein the amount of calcium in the alloy is such that the ratio of tin to calcium is not less than 15:1.

122. (New) The cell of Claim 111 wherein the amount of calcium in the alloy is such that the ratio of tin to calcium is not less than 20:1.

123. (New) The cell of Claim 111 wherein calcium is present in the alloy in the range of about 0.03 percent to about 0.055 percent and the ratio of tin to calcium is not less than 15:1.

124. (New) The cell of Claim 111 wherein calcium is present in the alloy in the range of about 0.03 percent to about 0.055 percent and the ratio of tin to calcium is not less than 20:1.

125. (New) The cell of Claim 111 wherein the alloy further includes aluminum in the range of greater than 0 to about 0.03 percent.

126. (New) The cell of Claim 111 wherein the alloy further includes aluminum in the range of about 0.012 percent to about 0.020 percent.

127. (New) The cell of Claim 111 wherein the positive and negative plates are configured to be separated by a separator.

128. (New) The cell of Claim 111 wherein the SLI battery comprises a starting, lighting and ignition battery.

129. (New) A lead-acid cell for an SLI battery configured for use in vehicle applications comprising:

- a container;

- a positive plate and a negative plate disposed within the container;

- a separator disposed within the container and separating the positive plate and the negative plate;

- wherein the positive plate comprises a thin grid supporting structure formed by book mold gravity casting and having a layer of active material; and

- wherein the grid supporting structure comprises

 - a lead-based alloy consisting essentially of lead;

 - tin in the range of about 0.8 percent to about 1.2 percent;

 - tin in a ratio to calcium of greater than 12:1; and

 - silver in the range of greater than 0 to less than 0.015 percent;

 - wherein the percentages are based upon the total weight of the alloy.

130. (New) The cell of Claim 129 wherein the tin content of the alloy is in the range of about 0.8 percent to about 1.1 percent and the ratio of tin to calcium is greater than 15:1.

131. (New) The cell of Claim 129 wherein the tin content of the alloy is in the range of about 0.8 percent to about 1.2 percent and the ratio of tin to calcium is greater than 20:1.

132. (New) The cell of Claim 129 wherein the tin content of the alloy is in the range of about 0.8 percent to about 1.1 percent.

133. (New) The cell of Claim 129 wherein the silver content of the alloy is in the range of about 0.003 percent to less than 0.015 percent.

134. (New) The cell of Claim 129 wherein the silver content of the alloy is in the range of about 0.008 percent to less than 0.015 percent.

135. (New) The cell of Claim 129 wherein the silver content of the alloy is in the range of about 0.005 percent to less than 0.015 percent.

136. (New) The cell of Claim 129 wherein the silver content of the alloy is in the range of greater than 0 to about 0.0124 percent.

137. (New) The cell of Claim 129 wherein the silver content of the alloy is in the range of about 0.003 percent to about 0.0124 percent.

138. (New) The cell of Claim 129 wherein the silver content of the alloy is in the range of about 0.008 percent to about 0.0124 percent.

139. (New) The cell of Claim 129 wherein the silver content of the alloy is in the range of about 0.005 percent to about 0.0124 percent.

140. (New) The cell of Claim 129 wherein the silver content of the alloy is in the range of greater than 0 to less than 0.01 percent.

141. (New) The cell of Claim 129 wherein the silver content of the alloy is in the range of greater than 0 to about 0.008 percent.

142. (New) The cell of Claim 129 wherein the amount of calcium in the alloy is such that the ratio of tin to calcium is not less than 15:1.

143. (New) The cell of Claim 129 wherein the amount of calcium in the alloy is such that the ratio of tin to calcium is not less than 20:1.

144. (New) The cell of Claim 129 wherein calcium is present in the alloy in the range of about 0.03 percent to about 0.055 percent and the ratio of tin to calcium is not less than 15:1.

145. (New) The cell of Claim 129 wherein calcium is present in the alloy in the range of about 0.03 percent to about 0.055 percent and the ratio of tin to calcium is not less than 20:1.

146. (New) The cell of Claim 129 wherein the alloy further includes aluminum in the range of greater than 0 to about 0.03 percent.

147. (New) The cell of Claim 129 wherein the alloy further includes aluminum in the range of about 0.012 percent to about 0.020 percent.

148. (New) The cell of Claim 129 wherein the SLI battery comprises a starting, lighting and ignition battery.